Remarks/Arguments:

Claims 1, 2, 12, 14, 15 and 16 are pending. The remaining claims have now been cancelled.

Section 103 Rejections

Claims 1, 2, 12 and 14 have been rejected as being obvious in view of Yamaji and Seto. Applicants respectfully submit that this rejection is overcome for the reasons set forth below.

Amended claim 1 now includes features which are not suggested by the cited references, namely:

- a first digital modulator and a second digital modulator **for performing sigma-delta modulation on** an I signal and a Q signal, which are **multi-valued digital baseband modulation signals**, into a digital I signal and a digital Q signal, respectively, **having the number of bits smaller than that of the baseband modulation signals**;

- a **first E/O converter and a second E/O converter** . . . ;

- a **first O/E converter and a second O/E converter** . . . ; and

- a quadrature modulator **for performing quadrature modulation on a carrier wave by the output signal of each of the first and second O/E converters**, as an I signal and a Q signal, respectively.

Basis for amended claim 1 may be seen, for example, in Figure 10. As shown, master station 301 includes first and second digital modulators 1, 2. Each of these modulators **performs sigma-delta modulation on the I and Q baseband digital signals**. First and second E/O converters 304 and 305 convert the modulated baseband signals into an optical signal. As also shown, first and second O/E converters 308 and 325 convert the received signals from master station 301 back into electrical signals. Quadrature modulator 3 then

performs quadrature modulation on a carrier signal, using the output signals from the first and second O/E converters. This quadrature modulated signal is then transmitted by way of antenna 303.

Applicants emphasize that the present invention, as recited in amended claim 1, explicitly states that the **first and second digital modulators perform sigma-delta modulation on the baseband signals**. These formed signals are converted first into optical signals and then converted back into electrical signals at the slave station. After the baseband signal is in electrical form, the **quadrature modulator performs modulation on a carrier signal for eventual transmission**.

In addition, as originally recited in amended claim 1, the sigma-delta modulation converts a multi-valued baseband modulation signal into a digital signal that has a number of bits smaller than that of the baseband modulation signal.

Applicants further note that the present invention advantageously is not affected by distortion of the O/E converters and E/O converters, because these converters cancel out whatever distortion is formed in transmission line 300.

Yamaji, on the other hand, discloses in Figure 2, sigma-delta modulators 7 and 8 which convert directly a carrier signal for transmission. Yamaji does **not** disclose outputting an optical signal as a **baseband sigma-delta modulated signal** (through an optical transmission path). Yamaji does **not** disclose converting the resulting optical signal back into an electrical signal. Furthermore, Yamaji does **not** disclose **modulating a carrier signal using the converted electrical signals**.

Seto, as shown in Figure 15, simply discloses a transmitting station having E/O converter 18 and a separate transmitting device having O/E converter 34. Seto does **not** add features that are missing from Yamaji. Namely, Seto does **not** disclose (1) **sigma-delta modulation that modulates baseband signals**, then (2) **converts such signals into an optical signal**, next (3) **converts the optical signal back into electrical signals** and, finally (4) **modulates a carrier signal using these electrical signals**.

It is respectfully submitted that the combination of Yamaji and Seto do **not** form the combinations explicitly recited in amended claim 1. Yamaji simply discloses transmitting a carrier signal having sigma-delta modulation. Seto simply discloses an E/O to an O/E converter. Putting the two together does not produce the combination disclosed in amended claim 1.

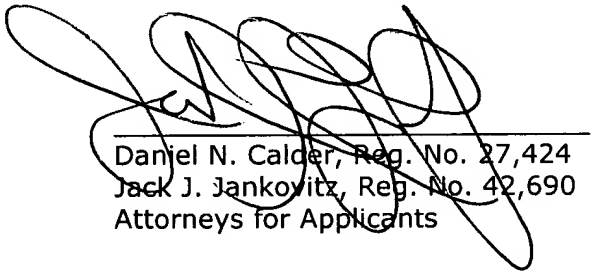
Favorable reconsideration is requested for amended claim 1.

Dependent claims 2, 12 and 14-16 depend from amended claim 1 and are, therefore, not subject to rejection in view of the cited references for at least the same reasons set forth for amended claim 1. Favorable reconsideration is requested for these dependent claims.

Conclusion

All pending claims are now in condition for allowance.

Respectfully submitted,



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